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09/834,901	04/16/2001	Young-Hyun Kang	P56352	5378
7590	11/28/2005		EXAMINER	
Robert E. Bushnell 1522 K Street, N.W., Suite 300 Washington, DC 20005-1202			ZHONG, CHAD	
			ART UNIT	PAPER NUMBER
			2152	
DATE MAILED: 11/28/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/834,901	KANG, YOUNG-HYUN	
	Examiner	Art Unit	
	Chad Zhong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

OFFICE ACTION

1. In response to amendment filed 10/17/2005, claims 1-14 are pending for examination.

Applicant's arguments are not persuasive, and the previous rejections are maintained. In addition, newly rejections cited are stated below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Logical alarms and physical alarms critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Specifically, logical alarms and physical alarms are not clearly differentiated in Applicant's specification. In specification [0032], applicant vaguely defined what a logical error and physical error is, that may contribute to corresponding alarms. Applicant's definition of the differences between logical errors and physical errors is not clear. [0032] is cited below for the ease of reference.

[0032] Accordingly, the network management system 300 analyzes the alarm data format to determine at step 504 whether the nature of the alarm corresponds to a logical error or a physical error. If the alarm generated from a certain network element is determined to correspond to a physical error, like loss of signal (LOS), alarm indication signal (AIS), loss of frame (LOF), loss of pointer (LOP), etc., rather than a logical alarm like loss of link (LOL), poor quality of signal (QOS), etc., the network management system proceeds to step 506 to simply parse the data format of the

received alarm information for storage into the database 302.

Specifically, it is not clear the difference(s) between loss of signal and loss of link, a loss of either one may lead to the loss of the other, poor quality of signal may be contributed to physical errors.

Furthermore, alarm indication signal maybe contributed to physical error or logical error. Applicant has failed to further define specific differences between logical errors and a physical errors, in his attempt to define the differences the Applicant chose to state a few items that are examples of physical and logical alarms without alluding to what the actual differences are between errors that contribute to physical alarms and errors that contribute to logical alarms.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) The phrase “logical alarm”, claim 1, lines 4 and 6 is not clearly understood and rendering vague the corresponding claims. The specification does not support “logical alarm” but only logical error or failure.

b) the phrase “alarm information corresponding to a logical alarm”, claim 1 line 4 and 6, is not clearly understood. “logical” may refer to the type of errors that contribute to alarm information, but not to the alarm.

c) the phrase “the alarm information does not correspond to a logical error”, claim 4, line 3 is not clearly understood. It is unclear what other type of alarm information can exist or how to differentiate between them.

d) the phrase “logical error” and “physical error”, claim 8, lines 6 and 9, claim 1, line 3 are not clearly understood. It is unclear how error information maybe designated as logical or physical.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris, US 5,946,373, in view of Joyce, US 4,195,343.

9. As per claim 1, Harris teaches a method for managing alarm information in a network management system, comprising the steps of:

receiving alarm information (the alarm information are trunk outage information) generated from any of a plurality of network elements (abstract; each network devices are able to generate an alarm when there is an occurrence of error, see for example, Col. 2, lines 55-65);

determining whether or not said alarm information corresponds to a logical alarm (abstract, wherein the alarms are corresponding to the trunks failure, Col. 2, lines 25-35; as per Examiner's interpretation of the claim language, logical alarms are alarms wherein the location and cause of the alarm is not known, an inference is needed to locate the location and the exact cause of the alarm, this is supported in Harris Col. 2, lines 55-60; Col. 5, lines 35-45; Col. 6, lines 55-65);

determining the location of the network element generating the alarm information, when it is determined that the alarm information corresponds to a logical alarm (Col. 2, lines 25-39; Col. 6, lines 35-47, lines 57-64, the truth table or the inference engine goes about and attempt to locate the location and the cause of the error, physical alarm is when the location of the alarm is known, and logical alarm is when the alarm location is not known and need to be inferred);

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searching a database to determine whether said database already has said alarm information stored therein, according to the location of the network element generating the alarm information (see for example, Col. 11, lines 5-15);

storing said alarm information when it is determined that said database does not have said alarm information already stored therein (Col. 11, lines 25-30, wherein the same type of alarm is generated, i.e. *“no new information about the outage has been determined”*);

Harris does not explicitly teach:

increasing a count value representing a number of times in which the same alarm information has been generated, without redundantly storing said alarm information into said database, when it is determined that said alarm information is already stored in said database; and

storing the increased count value at a position corresponding to said alarm information already stored in said database.

However, Joyce teaches a memory buffer and a counter that associate with it. Specifically, the counter will keep track of the number of times the same information is received by the memory, the information is stored within the same location as the previous stored information for replacement operations (Joyce, Col. 35, line 63 – Col. 36, line 5).

It would have been obvious to the person ordinary skill in the art at the time of the invention to incorporate the teachings Joyce with Harris because the combination would keep a count value of the number the information/errors that have occurred in the network and originating form the same source in order to keep track and monitor the frequency of occurrence of such information/errors and providing administrators with specifics about a source that produces the same information/errors for a number of times.

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10. As per claim 2, Harris – Joyce disclose the invention substantially as rejected in claim 1 above, including the step of searching said database further comprises the steps of:

analyzing said alarm information to detect its positional value and event type (Harris, Col. 2, lines 25-39; Col. 4, lines 5-25); and

determining whether said database has the alarm information of the same positional value and event type (Harris, Col. 8, lines 5-15).

11. As per claim 3, Harris – Joyce disclose the invention substantially as rejected in claim 1 above, including the step of searching said database further comprises the steps of:

detecting the positional value of said alarm information from its data format (Col. 4, lines 5-25); and

identifying destination information by analyzing a virtual path identifier and a virtual channel identifier of subscriber connection information corresponding to the alarm location to determine an identity of a subscriber from which said alarm information was generated (see for example, Col. 4, lines 5-25; Col. 5, lines 3-35).

12. As per claim 4, Harris – Joyce disclose the invention substantially as rejected in claim 1 above, including a step of parsing said alarm information for storage into said database when it is determined that the alarm information does not correspond to a logical alarm (Harris, Col. 8, lines 5-15).

13. As per claim 5, Harris – Joyce disclose the invention substantially as rejected in claim 1 above, including said database comprises a plurality of network element tables, each corresponding to a respective one of said network elements, said step of storing further comprising storing said alarm information into the corresponding network element table of said database according to the location of the network element (Harris, see for example, Col. 5, lines 3-35, furthermore, database includes plurality of tables, it is inherent that any information stored within the database will be in tabular form).

14. As per claim 6, Harris - Joyce disclose the invention substantially as rejected in claim 1 above, including further comprising a step of converting the alarm information through a database application interface into a database data format of said database to be recorded as new alarm information in the network element table of the network element generating the alarm information (Harris, Col. 8, lines 18-29, wherein the conversion taken place comprises of combining with previous alarm data into a new data set corresponding to a trunk to be stored in the database).

15. As per claim 7, Harris – Joyce disclose the invention substantially as rejected in claim 1 above, including:

- displaying said alarm information stored in said database;

- entering search parameters for finding a particular error corresponding to the alarm information or for finding a particular network element and its corresponding alarm information; and

- displaying information retrieved as a result of said step of entering search parameters (Harris, see for example, Col. 4, lines 25-30; Col. 5, lines 35-60).

16. As per claim 8, Harris teaches a method for managing alarm information in a network management system connected to a plurality of subscribers at a plurality of network elements, comprising the steps of:

- a method for managing alarm information in a network management system driving an alarm daemon processor when said network management system is powered on (Harris, Fig 1, item 101, fault management system inherently have alarm processor);

- receiving, via said alarm daemon processor, alarm information generated from at least one of said network elements (Harris, Fig 1, alarm information monitored in network by element 105, and fault management system receives and archives the alarms in element 103);

- determining whether said alarm information due to a logical error or a physical error in the network

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element generating the received alarm information (Harris, the physical errors's location are already known in advance, see for example, Col. 6, lines 45-50; the logical error's location is not determined hence an inference process is need to determine the location of the logical error, this is supported in Col. 6, lines 55-65);

determining the location of the network element generating the alarm information, when it is determined that the alarm information is due to a logical error (Harris, Col. 6, lines 55-65);

searching a database to determine whether said database already has said alarm information stored therein, according to the location of the network element generating the alarm information (Harris, Col. 11, lines 25-35, the database is searched to see if we can further determine a better location of the alarm origination);

store said alarm information when it is determined that said database does not have said alarm information already stored therein (Harris, Col. 11, lines 25-35, new instances of alarm information are stored).

Harris does not explicitly teach:

increasing a count value representing a number of times in which the same alarm information has been generated, without redundantly storing said alarm information into said database, when it is determined that said alarm information is already stored in said database; and

storing the increased count value at a position corresponding to said alarm information already stored in said database.

However, Joyce teaches a memory buffer and a counter that associate with it. Specifically, the counter will keep track of the number of times the same information is received by the memory, the information is stored within the same location as the previous stored information for replacement operations (Joyce, Col. 35, line 63 – Col. 36, line 5).

It would have been obvious to the person ordinary skill in the art at the time of the invention to

incorporate Joyce with the teachings of Harris because the combination would keep a count value of the number the information/errors that have occurred in the network and originating from the same source in order to keep track and monitor the frequency of occurrence of such information/errors and providing administrators with specifics about a source that produces the same information/errors for a number of times.

17. As per claims 9-14, claims 9-14 are rejected for the same reasons as rejection to claims 2-7 above respectively.

Conclusion

18. Applicant's remarks filed 10/17/2005 have been considered but are found not persuasive in view at the new grounds at rejection necessitated by Applicant's amendment.

19. (a) In the remark, the applicant argued in substance that Harris fails to disclose or suggest "whether or not the alarm information corresponds to a logical alarm as opposed to physical information".

(b) In the remark, the applicant argued in substance that Harris fails to disclose or suggest "look for the cause of the outage, such whether it was due to loss of link (LOL) or a loss of signal (LOS)"

(c) In the remark, the applicant argued in substance that Harris fails to disclose or suggest "determining whether or not said alarm information corresponds to a logical alarm"

(d) In the remark, the applicant argued in substance that Harris fails to disclose or suggest "determining whether or not said alarm information is due to a logical error or a physical error in the network element in the network element generating the received alarm information"

(e) In the remark, the applicant argued in substance that Harris fails to disclose or suggest "determine whether said database already has said alarm information stored therein, according to the

location of the network element generating the alarm information”

(f) In the remark, the applicant argued in substance that Harris fails to disclose or suggest “there is no determination as to whether the same alarm information has been generated”

(g) In the remark, Applicant contends “loss of signal” and “loss of link” is well known that the detection of Loss of Signal is different from the detection of Loss of Link. Applicant further gives examples in the OSI layer, each layer is monitored, and alarms created based on errors detected in the physical layer (layer 1) will result in the generation of a physical alarm. The features looked for are well known.

(h) As per claim 1, Harris doesn’t teach searching a database to determine whether said database already has said alarm information stored therein, according to the location of the network element generating the alarm information.

(i) As per claim 1, Joyce is used as hindsight and does not teach “increasing a count value representing a number of times in which the same alarm information has been generated, without redundantly storing said alarm information into said database, when it is determined that said alarm information is already stored in said database”

(a) In response to applicant's argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which claim relies (i.e., logic alarms) are not clearly defined in Applicant’s specification. In specification [0032], applicant defined what a logical error and physical error is, however those are not logical alarms. Furthermore, Applicant’s definition of

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the differences between logical error and physical error is not clear. [0032] is cited below for the ease of reference.

[0032] Accordingly, the network management system 300 analyzes the alarm data format to determine at step 504 whether the nature of the alarm corresponds to a logical error or a physical error. If the alarm generated from a certain network element is determined to correspond to a physical error, like loss of signal (LOS), alarm indication signal (AIS), loss of frame (LOF), loss of pointer (LOP), etc., rather than a logical alarm like loss of link (LOL), poor quality of signal (QOS), etc., the network management system proceeds to step 506 to simply parse the data format of the received alarm information for storage into the database 302.

Specifically, it is not clear the difference(s) between loss of signal and loss of link, a loss of either one will lead to the loss of the other, furthermore, loss of signal and poor quality of signal is actually dealing with the physical errors. Applicant has failed to further define specific differences between logical error and a physical error. For the purpose of examination, Examiner will treat the physical alarms and logical alarms as different types of alarms in the network. Specifically, logical alarms as link outage at a particular location within the topology of the network, which is the trunk outage as defined in Harris Col. 2, lines 25-40, and network equipment in a logical network topology, see for example, Col. 5, lines 35-60, these alarms need to be further evaluated to determine the specific locations of the error within the network topology via truth tables or inference engine (Col. 5, lines 60 – Col. 6, lines 15). The physical alarms as the alarm coming from the failed device itself, the location of the fault is known and no additional analysis is needed (Col. 6, lines 45-50)

(b) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., specific examples of logical alarms and physical information LOL, LOS etc.) are not recited in the rejected claim(s). Although

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the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Additionally, Harris teaches looking for the cause of the outage, see for example, Col. 6, lines 45-50, lines 55-65. Logical alarm need additional searches to locate the cause of the fault, physical alarm the cause of the alarm is known in advance.

(c) In response to Applicant's arguments, Harris teaches determining whether or not said alarm information corresponds to a logical alarm, see for example, Col. 6, lines 45-65, Fig 2C, wherein there are different types of alarms, logical alarm the precise location of the error is not known and need to be inferred or determined, whereas physical alarms are known in advance.

(d) In response to Applicant's arguments, the determination of a logical and physical errors are taught at least in Fig 2C, refer the current office action for additional details.

(e) In response to Applicant's arguments. Referring to exemplary sections of Col. 8, lines 5-15, wherein the database/data store is looked into and attempt to find previous occurrences of the alarm, there is attempt to find alarms based on their type and location. This alarm searching through database is further explained in Col. 11, lines 5-50, wherein the alarm entries in the data store is location dependent. Thus, Harris teaches determining whether said database already has said alarm information stored therein, according to the location of the network element generating the alarm information.

(f) In response to Applicant's arguments, Harris teaches the above section in Col. 11, lines 25-30, wherein the same type of alarm is generated, i.e. "no new information about the outage has been determined" emphasis added.

(g) In response to Applicant's arguments, there is never a direct correlation between 'physical error' and 'physical alarm' in applicant's specification, the closest mention of which came in Applicant's specification, paragraph [0032], wherein applicant attempted to define *physical errors* as LOS, AIS, LOF, LOP etc, and *logical alarms*, LOL, QOS etc. However, It is not clearly defined what is the 'physical alarm'. Further, assuming 'physical errors' are equivalent of 'physical alarms', Examiner asserts the difference between logical alarms and physical alarms are not clearly defined within Applicant's specification, moreover, Applicant's definition of *Real Alarm*, *Logical Alarm* and *OSI layer* are not (emphasis added) part of Applicant's specification but rather from other sources such as the dictionary, it is not clear why 'real alarm' was defined since it is not part of the written disclosure or claims. Referring now to "SuperStack II Hub 10 Management User Guide", 3Com, September 1996, pg 5, lines 5-7. 3Com clearly specified the link test pulse is used to monitor the physical link such as twisted pair and fiber optic media. Next, referring to pg 6, lines 9-11, 3Com teaches 'loss of link' or LOL is a loss in twisted pair medium or fiber optic medium, part of the physical medium (emphasis added) the packet is traveling on. Thus, LOL as defined by 3Com reference is a indication of a *physical alarm* because it correspond to a failure of the physical medium, the loss of signal and loss of link therefore can be both interpreted as part of physical alarm.

(h) In response to applicant's arguments, Harris teaches storing the fault location in a separate data structure, where the information is stored based on the fault location (Col. 11, lines 1-3). Next, step 265 compares the existing set of data structures against the list of trunks produced in step 264 to determine if there is any match or partial match. Therefore, the search in step 265 is comparing at least the location information which are stored previously in the data structure in step 264.

(i) In response to Applicant's arguments, Joyce is analogous prior art because Harris teaches a counter for storing information in a database, similarly, Joyce teaches storing of information within

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another form of storage, i.e. memory. The motivation to combine the two references would be to keep track and monitor the frequency of occurrence of such information/errors and providing administrators with specifics about a source that produces the same information/errors for a number of times. In regards to the term 'redundantly', Applicant's specification indicates 'redundantly' as storing of data multiple copies of data multiple times leading to reducing of the space/capacity of the storage device (2002-0069199, [0012], [0045]). Joyce reads on this limitation because Joyce is not (emphasis added) placing the data information into the memory repeatedly, but rather replacement/overwrite of the old data with the new data, realizing an update in the memory without incurring a strain on the storage medium. Further, Joyce increments the counter value when information corresponding to replacement information arrives.

THIS ACTION IS MADE FINAL. Applicant is reined of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications are cited to further show the state of the art with respect to "Method For Managing Alarm Information In A Network Management System".

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- i. US 5333183 Herbert.
- ii. US 5596632 Curtis et al.
- iii. US 6389464 Krishnamurthy et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Zhong whose telephone number is (571)272-3946. The examiner can normally be reached on M-F 7:15 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAROENCHONWANIT, BUNJOB can be reached on (571)272-3913. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CZ
November 14, 2005



**BUNJOB JAROENCHONWANIT
PRIMARY EXAMINER**